

## **SLEEP STATE CLASSIFICATION**

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### **ABSTRACT OF THE DISCLOSURE**

Systems and methods for sleep state classification involve detecting  
10 conditions related to sleep, including at least one condition associated with rapid eye  
movement (REM) sleep. Additionally, a condition modulated by the sleep-wake  
status of the patient may be detected. A medical system that is partially or fully  
implantable incorporates sensors and circuitry for detecting and processing the  
sleep-related signals. A sleep state processor classifies the patient's sleep state  
15 based on the sleep-related signals. Sleep state classification may be used in  
connection with the delivery of sleep state appropriate therapy, diagnostic testing, or  
patient monitoring.